MISSOURI BOTANICAL GARDEN

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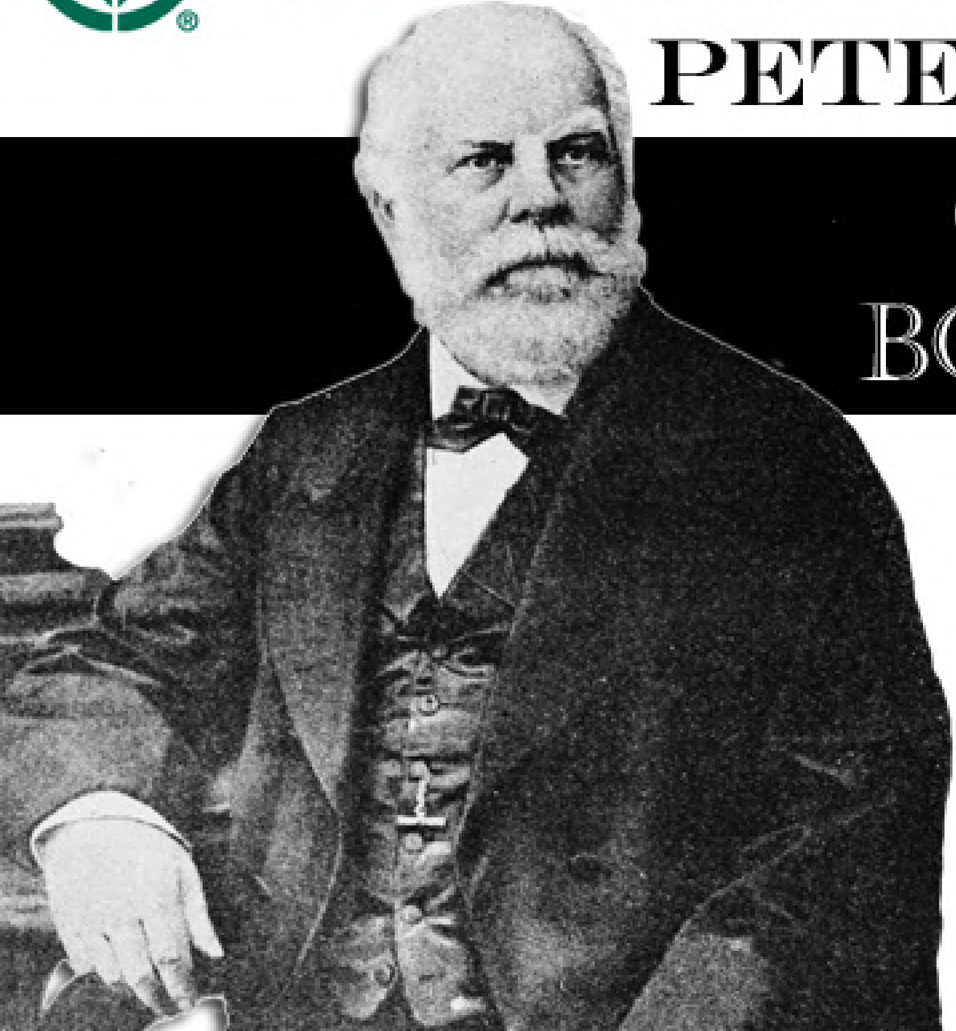

GEORGE ENGELMANN BOTANICAL NOTEBOOKS

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Febr 1859

~~incisa~~
~~[illegible]~~

Euphorbia schizoloba n. sp. perennis, a basi ramosa, erecta ascendensve, glaberrima glaucescens; foliis brevibus ovatis ~~brevissime~~ integris cuspidatis in petiolum brevem attenuatis; umbellis trifidis; bracteis cuspidatis, inferioribus ~~in petiolum~~ rhombeis, superioribus ~~basi truncatis~~ transversis; involucri majoris intus vix ~~pubescenti~~ subnudi [illegible] glandulis stipitatis transversis truncatis cornutis s. irregulariter incisis nec cornutis; lobis involucri apice truncatis glanduloso-incrassatis emarginatis seu irregulariter bilobis; stylis ovario laevi longe exerto longioribus, basi connatis bilobis

Camp 62
March 26 1858 Dr J. S. Newberry. 30 miles east of the Colorado
latit. 35°
2000 – ~~3000~~

very nearly allied to Euph. montana Engelm. in Bot. Bound. Exped.; — ~~[illegible]~~ growth, leaves, and trifid umbells; but amply distinguished from this and all our other peploid Euphorbiae by the ~~absence~~ large involucre, the absence of the horns, and the incised ~~[illegible]~~ naked lobes. In all the allied species the lobes are ~~ovate~~ membranous obtuse and villous in the inner side; ~~the~~ The ~~[illegible]~~ bracts at the base of the male flowers are almost wanting, and the few that are found occasionally are almost destitute of pubescence which usually covers these organs. The styles are much beyond the ovary united at ~~the~~ lower third and ~~divided~~ bifid ~~at~~ the upper third; stigmas clavate — No fruit or seed seen.

Stems 8–12 inches high; leaves 5–7'' long 3–4'' wide; — involucre abt 2 l. long and with the glands more ~~than that in diameter~~

Febr. 1859

lurida
~~discolor~~

Euphorbia ~~Xceras~~ n. sp. e basi perennante multicaulis, glaberrima, junior tota rubicunda; foliis oblanceolatis integris ~~acutis~~ basi angustatis subsessilibus, patulis; umbella 3-fida bracteis cuspidatis, inferioribus obovatis seu oblanceolatis, superioribus suborbiculatis; involucri parvi ~~glabrati~~ intus pubescentis glandulis transversis, crenatis, lobis ovatis membranaceis pubescentibus; stylis ovario lævi multo brevioribus, vix basi connatis, bilobis

J. S. Camp 81–82 Base of San Francisco Mountains 7000' 35° latid.
Dr Newberry 27 April 1858

With a good deal of hesitation I introduce this plant as a new species, ~~because~~ as the specimens are ~~so very young~~ scarcely enough developed, — ~~but it is so well distinguished~~ but though we have not the fruit ~~it seems so well marked and~~ and can not determine ~~with~~ what section of the umbellate Euphorbiae it should be classed, it seems ~~to~~ to be well distinguished from any of the known species of the U. States or Mexico ~~that it is not probable and~~. ~~From~~ From the very similar E. esulaeformis it is distinguished (by the entire absence of horns on the glands and by the very short styles;) ##

Stems of the young specimens, just commencing to flower 6 inches high; ~~the~~ with the leaves ~~(5–8''' by 1½–2''' broad~~ ~~especially~~ of a brownish red or on the upper side of the leaves of a reddish green colour; leaves 5–8''' long and 1½ 2 l. ~~broad~~; involucre abt 1 l. long; Linear bracts of the male flowers numerous, hairy

so that it becomes even doubtful whether the plant does belong to Esulae or not more properly to Tithymalus.

6649

Jan 1861

~~gymnoclada~~

Euphorbia gymnoclada n. sp.

fruticosa? ramis gracilibus strictis basi lignescentibus, teretibus glabriusculis; internodiis ~~ramosis~~ elongatis multoties brevioribus parvis; foliis deciduis rameis ternatis oblanceolato-linearibus integris ~~planis~~ carnosis conduplicatis subtus pubentis supra subnudis, in petiolum brevissimum attenuatis; cyma terminali umbelliformi triradiata ~~pedunculis~~ ~~involucris~~ pubescente ~~pedicellis bracteis linearibus pedicellos subaequantibus~~ radiis iteratim dichotomis; pedicellis bracteas angustas lineares et involucrum magnum ~~campanulatum~~ aequantibus. involucris ~~campanulatis~~ hemisph. extus intusque minute pubescentibus, ~~multifloris~~ dentibus orbiculatis ~~ovatis~~ ~~obtusis~~ fimbriato-dentatis; glandulis 5 transversis bilabiato-cyathiformibus, appendice sic deplanatione alba s. rosea, orbiculata integra suffultis; bracteolis paucissimis linearibus fimbriatis; floribus masculis numerosissimis stipitibus ~~pedicellis~~ demum exsertis; fl. femineum breviter ~~pedicellato~~ stipitato erecto; glaberrimo, stylis distinctis ~~ultra medium~~ 2/3 bifidis; stigmatibus ovario aequilongis; ~~stigmatibus~~ ramis clavatis ~~patulis~~ apice divaricatis ~~recurvis~~; capsula coccis globosis; seminibus ovatis, [illegible] depresso-tuberculatis, ecarunculatis. —

Cape St Lucas, Southern point of Peninsula of California. Xanthus leg. — Base of stem unknown, but probably fruticose; slender branches below ligneous; internodes 2–3 inches long; leaves almost all fallen, on the branches in threes, 4–7 lines long, and 1/2–1 1/2 lines wide, folded, on a petiole less than 1 line long; cyme 1 or 1 1/2 inches in diameter; involucres with the large appendages 4 or 5 lines wide ~~in diameter~~; Male flowers of 20–30, with very ~~few~~ (probably 5) bracteoles, outside of the styles ~~less than~~ 1/2 line long or less. Capsule 2 1/2 lines in diameter, cocci globose, with a slight groove on the back; seeds about 1 1/2 lines long, covered with flattened tubercules. —

~~This species is evidently~~ from that closely allied to E. peganoides Boiss. Cent. Euph. p. 21. from Mexico; it is distinguished

6650

small bracts, the

by the pubescence of the involucre, ~~and the (size?) shape and~~ the shape of the glands, the large & entire appendages, and short pedicell of the ~~cup~~ ~~ovary~~ female flower.—

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Dec 1859

Euphorbia mercurialina Mx II. 212

caulibus e ~~radice~~ rhizomate perenni perpendiculari ramosa pluribus ~~tenuis~~ (gracilis erectis) glaberrimis

foliis ~~tenuibus~~ inferioribus alternis minoribus, superioribus majoribus oppositis terminis omnibus, breviter petiolatis ovatis obtusis integris seu repandis tenuibus, venosis glabris pallidis margine et ad petiolos dense breviter villoso-ciliatis;

pedunculis alaribus, capillaceis, cum anthodio glaberrimis, foliis saepe aequalibus seu demum superantibus;

anthodio masculo seu hermaphrodito, (hemisphaerico lato), intus nudo

glandulis 5 compressis undulato bilobatis, appendice aequato alba plerumque undulato crenulato marginatis; lobis glabris ovatis truncatis, laciniatis;

bracteolis paucis linearibus laciniosulatis

fl. masculis (staminibus) 15–18, antherarum loculis globosis transversim ~~superiantibus~~ dehiscentibus.

(ovario laevi), stylis basi solum coalitis aequilongis, ~~medio~~ ad medium bifidis; stigmatibus ~~[illegible]~~ obliquis subrevolutis

St Marks, Florida, Alphonso Wood March 1857. – Many slender stems 8 inches high, from a thick (like a goose-quill) rhizoma, which seems to penetrate deep into the sand. leaves thin membranaceous with darker veins and in shape size and texture considerably resembling the leaves of Mercurialis annua, though not sharply serrate but only slightly undulate or bluntly repand toothed, petioles 1–1½ lines long very slender, mostly pubescent or rather ciliate.

6651

lower leaves few, and small, scarcely 6 lines long, upper ones 1–1 1/2 inches long (and half as wide) all oval, obtuse, glabrous and densely woolly ciliate on the margin. Only with the division of the stem the leaves are opposite or ternate; Peduncles 1/2–1 1/4 the inches long, very slender; Involucre nearly 1 line in diameter; with the appendages 1/2–1 3/4 lines); — glands bilabiate, margins crenulate or undulate with narrow white appendages; ~~Lobes~~ Lobes are between them laciniate, rather large, smooth,

This is from West Florida, and Michaux's plant from Knoxville Tennessee; this latter has also folia opposita — but may Mx not have seen only an older plant, with all the rameal leaves ternate or opposite?

Gray's remark that in Michaux' plant the leaves are densely ciliate and obtuse, Michx whole description and the name seem to point to this plant.

I can not identify it among Chapman's new species, though it ought to be known to him

p. 173

(E. heterantha Nutt Pl. Ark)

= Spreng. Syst. III, 791 ~~glabra~~ gracilis ~~ramosa~~ tota

Euphorbia hexagona Nutt. Annua erecta, foliis oppositis, breviter petiolatis, (ex stipulatis, bis aequalibus) linearibus ~~lanceolatis~~, utrinque acutis, mucronatis supra glabris subtus margineque scabris, foliis rameis ~~summis~~ lineari-filiformibus; ramulis floriferis lateralibus terminalibusque dichotomis; involucris alaribus ~~extus scabris~~ breviter pedunculatis, campanulatis scabrellis; glandulis 5 transverse ellipticis, appendiculis ~~ovato~~-triangularibus, acuminatis involucro aequantibus instructis; (flores masculos femineumque s. plerumque solum masculos includentibus) stylis ovarium aequantibus, basi connatis, bilobis, stigmatibus foliaceis expansis crassis ~~capitato-incrassatis~~, capsulis ~~laevibus~~, obtuse angulatis; seminibus magnis ovatis verrucosis nigricantibus ~~dense tuberculatis~~

Prairie between Cow Creek and Little Arkansas Fendler 788, August. — ~~May spec~~ 10 — 18 inches high; main stem terete below, above as well as branches angled; ~~smaller~~ branchlets scabrous; lowest leaves not seen; upper ones 1 inch long 2 l. wide; uppermost 6–10 l. by almost filiform; involucres about 1 l. in diameter lobes mostly sterile; lobes yellowish green; capsule 2 l. in diameter seeds oval not angled, ~~not carunculate~~ (caruncle deciduous?) — black, tuberculated 1,4 l. long.

17.b. Euphorbia ~~scabrella~~ brevistipula brevistipula n. sp. annua erecto-patula, caule glabriusculo, ramis, foliorum facie inferiore, involucris capsulisque ~~hirtellis~~ pilis brevibus adspersis; stipulis (minutis, verrucas simulantibus ~~formae~~); foliis basi subaequali in petiol. angustatis lanceolato-linearibus versus apicem acutum truncatumve acute serratis; pedunculis petiolo longe brevioribus, in dichotomia ramulorum aequalium singulis; glandulis involucri 4 vix breviter appendiculatis; capsula obtuse angulata, margine [illegible] laciniato; seminibus ovatis basi truncatis obtuse quadrangulatis, ~~basi truncatis~~, irregulariter tuberculatis (albidis)

Gravelly banks of the Rio del Norte May. — Fendler 790

A very remarkable species, widely distinct from any other known to me. The stipules are so minute, only small points or tubercles, that they are easily overlooked; and the leaves can hardly be said to be oblique, — ~~but the involucres~~, nor ~~have~~ do they show that remarkable reticulated structure ~~almost~~ universal in this section; but ~~the stipules can be discovered~~ ~~the~~ the involucres have always 4 glands,

the stipules certainly exist, and the serrature of the leaves appears to be also characteristic; so that we must class it with ~~the~~ Anisophyllum. — Stem of the only specimen collected 3 inches high, branches spreading 6 inches; leaves Lowest pair of leaves obovate spathulate, entire; other lanceolate linear, more or less serrate either very acute or bidentate truncate at the apex; $\frac{3}{4}$ to 1 inch long, $1\frac{1}{2}$ or 2 l. wide. Branches regularly dichotomous; peduncles shorter the involucre; appendages of glands very small, triangular or emarginate, yellowish green, or none. styles as long as ovary, bifid to the base below the middle. Capsules large; seeds almost cubic, irregularly tuberculated, whitish; 0.9 1 l. by 0.7 0.8 l. diameter, truncate at base, acutish above; in size ~~one~~ of the largest of this section between E. Peplis & E. polygonifolia.

Notes on Euph. Ipecacuanha

Perennis foliis oppositis (ex stipulatis) erecto-patulis humilis ~~[illegible]~~ orbiculatis, obovatis oblongis, lineari busve; glabris basi angustatis sed raro ~~s~~subpetiolatis; involucris alaribus ~~dichotomis remotis~~ singulis longe pedunculatis; campanulato-hemisphaericis — ~~G~~glandulis 5 aequalibus transverse ellipticis, non appendiculatis, ~~laciniis~~ lobis (~~inter glandulas~~ multo minoribus) ovatis quadratis, truncatis ~~incisis~~ dentatis; stylis ovario demum longe stipitato pendulo multo brevioribus basi connatis, apice bilobis, stigmatibus ~~clavato capitatis~~ dilatatis (very much like E. hexagona!) capsulis longe pedicellatis dependentis ~~obtuse angulatis~~, seminibus ~~compressis~~ ovatis albidis impresso-punctatis. see pag. 73

E. atrorubens ~~Gl.~~ see pag. 73.

New Jersey to South Carolina & Florida in Sand. —

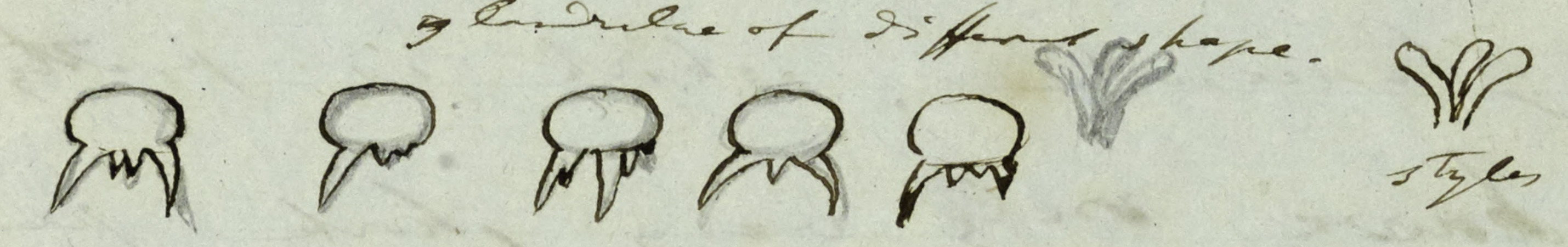
I have another form from Florida (Chapman) which may be different — ~~whole~~ whole involucre, especially glands deep purple — lobes of involucre between glands truncate, less strongly fimbriate; stipe of capsule short! styles enlarged towards the ~~top~~ apex, only slightly bilobed. — Leaves strongly obovate spathulate, stems and branches erect. Ought to be named E. atrorubens n. sp.

Yes! ~~vide pag.~~ If the specimen from N. Carolina labeled by Curtis E. gracilis Ell belongs here — then the seeds are similar to E. Ipecacuanha, but smaller.

E. gracilis Curtis in Short herb No. 22 must be something else, as it has petaloid gland — (~~perhaps~~) no doubt the same as my plant from the same source which I consider a variety of E. corollata. vide pag 40.

Elliotts description of E. gracilis II, 657 might agree with our plant, but he says: petaloid segments [gland] scarcely coloured" — further he gives the leaves as linear or linear lanceolate. —

Euphorbia lanata Sieber Asia. A very singular form; dichotomous, leaves opposite, petioled acutely dentate, ovate, but not oblique, nor stipulate; ~~but unequ~~ but unequal; one always larger than the opposite one. involucres in the dichotomy or pseudo axillary; branches alternate, that is to say one branch, in the axill of the larger leaf is larger, straight and represents the continuation of the stem; one is smaller, in the axill of the smaller leaf and represents a branch, which branches alternate — ~~On the smaller branches we find in place of this lateral branch an involucre, always~~ On the smaller branches this lateral branch is wanting, and then the flower appears to be at the axill of the smaller leaf, though originally terminal.



Glands of involucre only 4! not appendiculate like those of Euphorbia stipulata, but cornute with two or more horns, like the E. Esulae horns oft unequal. — Styles united at base entire! Seeds large, sharply 4angled, truncate above and below, tuberculated; with a caruncle — ashy gray. —

Where does it belong?

6652

The Class: Oppositifoliae appears to be unnatural
It is necessary to examine not only the leaves. I have
four species, which belong here, and three are distinct

1. E. Ipecacuanha fructu longe pedicellato } fol. opposita vix petiol. integra
2. E. atrorubens. fructu breviter pedicellato } aequalia, gland. invol. involucri non appendiculata, 5. sem pallida punctato impressa
3. E. hexagona Nutt fol. opp. petiol. integr. aequal: gland. involucri petaloideo appendiculata 5. sem. nigricantia tuberculata
4. E. lanata Sieb. fol. opp. petiol. dentata inaequalia, gland involucri cornuta, 4 sem pallida tuberculata.

Euphorbia dentata annua pilosa folia opposita (2. superiora raro alterna) s. ~~alterna~~ tortiformibus petiolata, grosse dentata, — involucris brevissime pedunculatis, lobis 5 ovatis, laciniato, fissis, glandulis singularibus (rarius 2-3) cyathiformibus stipitatis gerentibus, stylis 3 ovarium superantibus, ~~ultra medium~~ fere ad basin bifidis stigmatibus filiformibus erectis — caps glabris s. angulato-subglobosis, sem. scabris ~~brunneis tuberculatis~~ verrucosis parce carunculatis. (1,2 l. long) see pag. 78

The principal stem terminates with an inflorescence as well as the branches — inflorescence a dichotomous glomerule, which is pretty compact, as the involucres have only very short pedicels. The dichotomation is at first regular, but afterwards the outer branches are more developped, and the inner ones fail

see pg. 82

Euphorbia cyathophora annua glabra ✓ foliis plerumque difform ~~glabris~~ sparsis petiolatis, ovato-panduriformibus et sinuato dentatis, s. lanceolatis linearibusve, integris ✓ floralibus plerumque basi coloratis, involucris pedunculo aequilongis ~~aequantibus~~, lobis 5 ovatis, incisis dentatis, glandulis singularibus cyathiformibus sessilem gerentibus, stylis ovario aequantibus ultra medium bifidis erectis stigmatibus filiformibus acutis ✓, sem. globosis, nigris, tuberculatis (1.0 l. long.)
-1.3

[illegible] very small

dentatis; glab. caps. & invol.
[illegible] 1837 fol. asp. [illegible]

rigid

Euphorbia prunifolia belongs here too: fruticosa? foliis ovatis petiolatis summis oppositis — seminibus angulato subglobosis tuberculatis

Euphorbia Wislizeni Wislizenus 238. Chihuahua, April
radice perenni tuberosa, caulibus humilibus, squamatis, ~~afoliis~~ aphyllis; squamis sparsis paucis; ~~summis albidis foliaceis~~; ~~glomer~~ caulibus simplicibus s. versus apicem parce ramosis; glomerulis compactis, terminalibus foliis involucralibus oblanceolatis, integris versus apicem serrulatis, ~~squamaeformibus~~ albidis ~~in~~ ~~suffultis~~; involucris campanulatis, brevissime pedunculatis; laciniis 5 ovatis abbreviatis, incisis ~~ta~~ laciniato-fissis; glandula unica, sessili, tenui, profunde cyathiformi; stylis bicornutis ovario aequantibus ultra medium bifidis, patulis s. recurvis; — — —

Tubers, 1/2 — 1 inch in diameter, reddish brown, white farinaceous inside, (~~growing~~ in deep sand) produce several stems 3 inches high simple or branching above, ~~with compact terminal~~ inflorescence — a few scales on the stem; some or more lanceolate short (1/2 inch) whitish bracteiform leaves under the inflorescence — involucres large 1 1/2 to 2 l. diameter, — gland cupshaped very deep — capsule long stipitate; seeds large

The same, Dr Gregg 346. Buenavista, March
involucres often with 2 or 3 glands, — sometimes without any:
lobes of involucre often 3 fid.
From a tuberous root several dead stems of last year, a foot or more high, at their base smaller branches now in flower, 2 to 6 or 8 inches high, with a few scales or small whitish green leaves, and similar bracts; these often numerous, longer than the inflorescence 6 – 9 l. long, white, with greenish point, at point often serrate oblanceolate. — How are the main stems, of which we now see the withered rests — also leafless? cups unusually large and deep, and this in all these forms.

The same — Dr Gregg. 451. Bolson de Mapimi, April — Only 2 inches high — Involucres a little longer peduncled, Involucral or rather bracteal leaves entire or serrate at the apex — Capsule large, 3 lines in diameter, smooth. — Seeds ovate (angular, ? tuberculate ?) whitish, 2~~¾~~ l. long 1½ l. in diameter; not ripe.

A third Specimen ~~of Dr~~ Gregg's, 533; Chihuahua, April, evidently also belongs here — though it differs by having one or two lanceolate (at base whitish) leaves on stem; leaf smooth above, with short hairs on the margin ~~and hairs~~ below; 2 l. long, 2 l. wide — lowest involucral leaves similar, interior ones white, & glabrous — Stems 8 inches high — inflorescence the same as in all others.

The character might be the following.

= E. radians B. Pl. Hartw.

Euphorbia Wislizeni n. sp. radice perenni, tuberosa, caulibus pluribus erectis, simplicibus s. ramosis; foliis paucis, plerisque squamaeformibus, ~~glabris~~, rare ~~[illegible]~~ apice herbaceis, glabris s. ciliatis; glomerulo terminali bracteis ~~longis~~ pluribus saepe longioribus oblanceolatis decoloratis integris s. apice serratis involucro comparato; involucris campanulatis, breviter (s. brevissime) pedicellatis, lobis 5 late ovatis trifidis s. ~~incisis~~ laciniatis; glandulis 1–3 s. nullis, sessilibus, submembranaceis profunde cyathiformibus; stylis basi coalitis ultra medium bifidis, patulis s. recurvis ovario aequantibus; capsula longius pedicellata (magna), seminibus ovatis (tuberculatis, angulatis ?) albidis. See pag. 76

Chihuahua to Buenavista — Wisliz. 238, Gregg 346. 533. 451. — fl. in April — but evidently though the same. — tuberous, farinaceous reddish brown root; — stems a few inches to a foot or more high — ~~leaves~~ mostly scaly; sometimes with one or two leaves. — Glomerules very dense, with whitish bracts much like the heads of a Monarda! — Capsule 3 lines in diameter, seed 2 l. long.

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Euphorbiae umbellatae

Glandulis petaloideo – appendiculatis.
(Corollatae)

Euphorbia marginata Pursh annua – etc. umbella 3(–4)fida; radiis 2–3 fidis; involucris primariis (sterilibus saepe 5-glandulosis) longius, ceteris (sterilibus s. fertilibus 4 glandulosis) brevius pedunculatis; ~~glandulis~~ ~~alterumque~~ ~~involucrorum~~ ~~5~~ q[illegible] glandulis transverse ovato ellipticis, late orbiculato-appendiculatis; append. subintegris subundis ~~laciniis~~ involucri 5 late ovatis, truncatis laciniatis; – ~~ovario villoso~~, stylis ~~pubescentibus~~ ad medium s. ultra medium bifidis ovario villoso ~~sub~~ aequantibus; seminibus ovato subglobosis tuberculatis, cinereis, s. obscuris

Seeds in Fremonts Specimen 1.8 l. long 1.4 l. wide in Fendlers Specim. from same region 1.6 l. long 1.3 l. wide, darker and much less rough.

In Lindheimers Specimens (Pl. L. 303.) the seed is more globose very rough, pale, 1.5 l. long 1.3 wide

I notice the glandular stipules very distinctly in this plant! in the next species they are not so distinct.

Euphorbia bicolor E&Gr. annua etc vide plant Lindh. 174 umbella 3fida – radiis trifidis, ~~dem~~ bifidis et demum subsimplicibus; involucris (pl. opposit.) majoribus, ~~pri~~maris longius ~~pedunculatis~~ reliquis brevius pedunculatis; plerisque 5 glandulosis, ~~superioribus~~ saepe 4 glandulosis; glandulis late orbiculato appendiculatis; appendiculis subintegris s. crenatis; involucris extus villosis plurimis sterilibus, paucis solum fertilibus; stylis pubescentibus ultra medium bifidis recurvis, ovario villoso aequantibus; seminibus subglobosis ~~leviter~~ tuberculato-rugosis. —

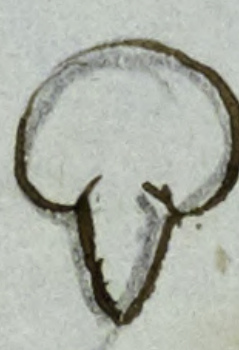
Only few fertile flowers on my specimens. and those only on the younger branches; – Umbell large 3fid, branches trifid, then bifid and the branchlets ~~frequently~~ often at last onesided, of the appearance of Euph. stipulat, with opposite leaves, and single flowers ~~alternate~~ clusters of flowers, but not alternate, but directed to the same side, ~~though~~ Seeds about 2 l. long 1,8 wide

Euphorbia corollata notes. 1, Specim. Gregg. Louisiana — some fertile involucra — 5 glands, with obovate orbiculate app. entire or emarginate — ovary on a long stipe, styles connate at base, bifid below the middle, longer than ovary; stigma clavate, recurved. —

2, Specim. St Louis — Many plants entirely sterile, others with a few fertile involucra, others again with most invol. fertile; — fertile involucra much like the above — but petaloid appendages oblong obovate, entire — styles more united at base, less bifid — recurved.

3, Another from St Louis very large; in some Involucra with appendages hardly 3 l. diameter — here 5 l. — appendages oblong obovate emarginate or 2 lobed

4, Specim. from N Carolina involucre & ovary slightly hairy every thing else the same.

Seeds ovate globose, whitish or reddish, very slightly tuberculate or roughened; — 1.1 l. long 0.8–9 in diameter; Embryo large, cotyledons orbicular,  —

I would therefore give the following character

Euph. corollata L. perennis, erecta, glabra s. parce pilosa; foliis ovatis lanceolatis, linearibusve, integris obtusis, sessilibus s. brevissime petiolatis; umbella 3–7 fida (plerumque 5) ramis bifidis, trifidis, vel umbelliferis; involucris longius pedunculatis; glandulis semper 5 petaloideo-emarginatis; appendicibus + obovatis, suborbiculatis s. oblongis, integris, crenulatis + emarginatis seu rarius 2–3 lobis (in angustifolia Ell. (Curtis)) involucro plus minus superantibus; ovarii subsuperantibus stylis basi connatis, vix ad medium bifidis, stigm. recurvis foliaceo-expansis crenulatis ~~clavatis~~, capsulis longe pedicellatis ~~stipitatis~~; seminibus ovato globosis, levissime tuberculatis.
+ glabellis mallotis longioribus

see pg. 66.

I find a specimen communicated by M. A. Curtis from N. Carolina, which belongs here, though labeled E. Ipecacuanha? E. gracilis Ell? vide pag. 34

It is a sterile specimen, about 9 inches high, branching terminal umbell 3 fid; branches bifid; involucres on shorter petioles, much smaller, petaloid margins smaller than involucre, broader than long, slightly crenulate. — ~~Stipe~~

Euph. marginata see pag. 29. glandular stipules

James, Hayden, Lindheimer. Nicollet

Drummond II. 318

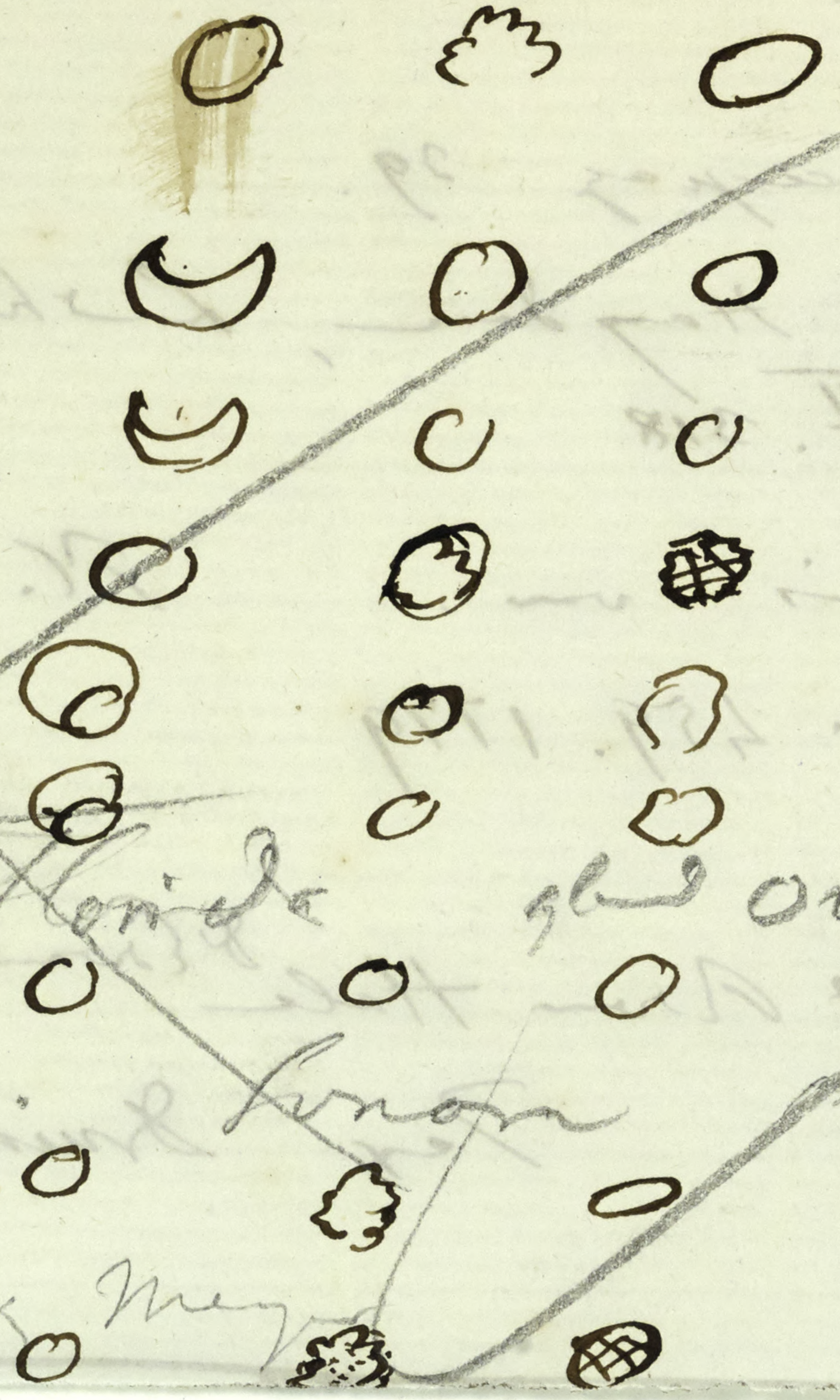
Euph. [illegible] is var. N. Lindh. ~~X~~ 303

Berlandier 459. 1779

E. bicolor E&G. Red River Hale Dr Edwards Arkansas Leavenworth

N Lindh 174 Tex Drummond

E Darlingtoni
Esula
Chamaecyparissus
Helioscopia
6654
marginata
bicolor
parviflora n sp Florida gland oval seeds & caps smooth
multiramis n sp Sonora caps verruc. seeds smooth
obtusata Pursh
dictyosperma Fisch & Meyer



Euphorb. XI

Involucrum 1¼ – 1½ l. in diameter; therefore half as wide as E. Corollata

With this specimen is a small branch with ~~a~~ single terminal fertile ~~flower~~ involucrum, and alternate leaves. – It is distinguished by the remarkably short stipe of capsule, which is hardly elevated above the involucrum. Seed not ripe but apparently very much like the seeds of E. corollata

It is perhaps a new species, which I propose to name E. Curtisii. Nr 22' H6 Short is the same. Can it be Elliotts E. corollata var angustifolia?

Euphorbia paniculata. vide notes on H6 Short 12. – Glands of involucre 5, with orbicular white slightly crenulate margin, which is half as large as involucre (in its greatest expansion 1¼ l. in diameter) – Styles united at base, bifid to the middle, stigmas clavate circinnate revolute. – Capsule on long stipes. Involucra mostly fertile on the single specimen seen by me.

Glandulis non appendiculatis

~~Tithymaloides~~

Transverse ellipticis, integris

(Tithymalus)

a. Seminibus rugosis (Helioscopiae)

1, capsulis laevibus

Euphorbia Helioscopia L. Europe

2, capsulis verrucosis

Euphorbia Arkansana E. & Gr. Arkansas & Texas annua, glabra, erecta, patulo-ramosa, ~~ramis~~ foliis obovato-spathulatis s. oblanceolatis, infimis in petiolum attenuatis, reliquis basi lata s. subcordata sessilibus, omnibus versus apicem serrulatis, obtusis s. mucronatis; umbellis trifidis, pluries bifidis; bracteis cordato- vel orbiculatis, subtriangularibus acutiusculis, serrulatis involucr~~alis~~ glandulis late ellipticis, tubi diametrum subaequantibus, lobis orbiculatis obtusis dense ciliatis; involucro intus cum bracteolis piloso; ovario toto verrucoso, stylis ad medium bifidis recurvis subaequantibus. capsula tota verrucosa, seminibus lenticularibus rugoso-reticulatis. fuscis.

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Seeds about 0,6 l. in diameter.

Euphorbia mexicana n. sp. (annua?) erecta, glabra ramis strictis erectis, foliis infimis obovato spathulatis, reliquis oblanceolatis basi acutiusculis subsessilibus, acutiusculis, versus apicem crenato-serratis; umbellis trifidis, bifidis; bracteis ovatis, (serratis), acutis basi obtusis; involucri glandulis ellipticis tubi diametro dimidium vix aequantibus, lobis orbiculatis obtusis, subintegris; involucro intus cum bracteolis laevi; stylis ad medium bifidis, recurvis, ovarium ~~dorsibus~~ ad in dorso coccorum verrucosum aequantibus; capsulae coccis dorso solum plus minus verrucosis; seminibus ovato lenticularibus, rugoso-reticulatis, fuscis.

In the Valley of the Nazas, Bolson de Mapimi Dr Gregg April 1847 (No 456 & 462): — Very nearly related to E. Arkansanum, though habitually different, lower part of specimens wanting — we do not know therefore, whether annual or perennial; — from the appearance of the specimens I would take 456 to be an annual, and 462 a perennial, ~~but both~~ the former is more slender, green; the latter stouter, branched from the base, reddish; — but both must be the same. — Stems about a foot high, erect, branches erect, almost adpressed; Umbels not regular, in some specimens ~~branches~~ only bifid, in others trifid; branchlets slender in 456, short, compact in 462; — Leaves ~~1~~ 1 1/4 inch long; in 462 serrate crenate almost to the base, in 456 serrate towards the point. — Bracts ~~elongated~~, longer than wide, acute not cordate, — ~~Seeds~~ Capsules ~~verrucose~~ only about the ~~[illegible] of~~ back of the cocci smooth in the interstices; strongly verrucose in 456, less so in 462 seeds larger than in Arkansanum and more oval, in 456 0,8 l. long and 0.65 l. broad; in 462 0.7 l. long and 0,6 l. broad. —

The differences of E. Arkansanum are the strictly erect branches, longer and narrower bracts, ~~involucre glandly~~ glabrous inside, glands not half as large, capsules

verrucose only on the back, seeds more oval, larger

*

b. Seminibus laevibus

1, capsulis verrucosis

α, annuae

Euphorbia obtusata. foliis omnibus obtusis; bracteis inferioribus ovatis s. ovato-oblongis superioribus cordato-triangularibus obtusis, mucronatis patulis stylis imo basi connatis, ad medium ~~profunde~~ bifidis ovarii verrucis cylindricis ~~obsitum~~ stipatum, aequantibus; sem. lenticularibus (0,8 - 0,85 l. in diametro) The variety from Arkansas not different; seeds 0.95 l. in diam

Euphorbia platyphylla foliis infimis obovato spathulatis, obtusis reliquis oblanceolatis, acutis; bracteis inferioribus oblanceolatis acutis, superioribus cordato triangularibus cuspidatis stylis erectis, tertia parte connatis; apice bilobis, ovarii verrucis hemisphericis obsitum longe superantibus; sem. ovato orbiculatis lenticularibus (1.00 × 0.85 l.) involucre larger, glands larger, ovary smaller, capsule larger than in E. obtusata; warts shorter, more depressed.

E. stricta stylis erectis, basi connatis, apice paulo magis bilobis, ovarium verrucis cylindricis stipatum ~~sub~~ aequantibus seminibus ovatis, compressis minoribus (0,7 × 0,5 l.

at Niagara! Plant ½-1 foot high leaves
Lake Champlain! with 5 rays and ternate 2d ary umbellets somewhat hairy

β. perennes.

Euphorbia Darlingtonii Torr. The Calif. ~~[illegible]~~ & Oregon Plant
E. dulcis Lin
E. verrucosa Lam
E. carniolica Jacq.
E. pilosa L
E. angulata Jacq.
E. fragifera Jan.
E. spinosa L
E. epithymoides L
E. palustris L

2, capsulis laevibus ~~semipallidis~~?

E. Gerardiana
E. Lagascae

A species from Florida belongs here, coll by Leavenworth, East Florida — involucre with transverse ellipt. glands — very few flowers — small, crowded, oblanceolate acute serrulate leaves. — To which section, I don't know.

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44

Glandulis lunatis s. bicornibus ♁ see below
Oppositi-foliae

E. Lathyris

Sparsifoliae vide below *
~~Glandulis lunatis s. bicornibus~~
** Bracteis liberis

Cyparissiae sem laevibus

sem. obscuris

E. Esula

E. Cyparissias

E. genistoides

sem pallidis

E. Paralias

E. nicaeensis

E. alexandrina

6655

Peploides, glaberrimae sem. tuberculatis s. exsculptis, ~~pallidis~~

Sem obscuris

E. sub nomine E. emarginata (an vera?) capsulis verrucosis seminibus obscuris tuberculato rugosis Hort. Berolin.

Sem pallidis

sem granulatis ~~verrucosis~~, tuberculatis

E. aleppica, seminibus saccharato-granulatis

E. exigua L sem. tuberculato-rugosis

E. Pithyusa L " " "

sem exsculptis.

~~S. facie~~ ventrali 4 punctatis, dorsali sub ~~laevibus~~ glaberrima

tetrapora
E. cuneifolia ~~[illegible]~~ E. ~~annua~~, erecta (s. e basi ~~adscendens~~) subsimplex ramosa foliis cuneatis obtusis s. plerumque retusis v. emarginatis exciso in petiolum attenuatis; umbella trifida, ~~involucri~~ bracteis ~~exterioribus~~ inferioribus spathulatis ~~interioribus~~ superioribus ~~transverse ovatis~~ orbiculato triangularibus, basi truncatis nec ~~[illegible]~~ cordatis, cornubus ~~glandulae~~ setaceis diametro transversalem glandulae aequantibus, subpatentibus; (stylis ovario subpatentibus ultra medium bifidis) (capsulis laevibus

---

above must be introduced * bracteis connatis; sem. laevibus obscuris

E. amygdaloides L

E. macroceras Fisch & Mey.

E. Characias L

♁ A better arrangement is the following.
glandulis lunatis, Esulae (omnes glaberrimae)
* seminibus laevibus
~~Bracteis~~ connatis Amygdaloides
Bracteis liberis Cyparissiae
Sem. obscura
Sem pallida
* seminibus tuberculatis s. exsculptis
Fol sparsis sem obsc — Sem pallid tuberc exsculpt.
Fol oppositis

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cm
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obtuse angulatis); seminibus parvis ~~minutis~~, (cinereis) ovato cylindricis, facie ventrali 4 punctatis, dorsali laevibus s. vix punctatis. Louisiana Hale

Georgia (Boykin in Hb Short) Texas, Lindh., Wright west of the Brazos. — (The description from the latter specimens which have been collected in April 1839.) — ~~Whole plant~~ ~~hardly~~ 3 inches to a foot ~~high~~ high, ~~stem~~ weak, lower leaves small, deeply ~~emarginate~~, upper ones larger (obtuse or retuse), 4-9 l. long by 4 wide; ~~upp involucral leaves 3-3½ l. long & wide~~. Seeds dark ashy gray, 0,6 l. long 0.4 l. in transverse diameter; quite smooth on the back or very slightly impressed-punctate. SS. facie ventrali bisulcatis, ~~dorsali punctatis~~

Euphorbia Peplus L. annua erecta, foliis petiolatis (spathulatis obovatis); ~~umbella~~ trifida, bracteis inferioribus obovatis basi attenuatis, superioribus late ovatis (nunquam cordatis; cornubus setaceis diametrum transversalem glandulae superantibus; stylis ovario brevioribus profunde bifidis; capsulae ~~dorso~~ coccis dorso bicarinato-alatis; seminibus ~~fusc~~ ovato-cylindricis, facie ventrali longitudinaliter bisulcatis, dorsali foveolato-punctatis.

Europa — eastern states, introduced. Virginia Pl. Fendl. 1200 — Leaves all petiolate; seeds 0.65-~~0.7~~ l. long, 0.4 l. in diameter. — Easily distinguished by the bialate capsule, and ovary.

Euphorbia ~~umbratilis~~ Roemeriana Scheele in Linnaea Lindh. in sched. annua erecta simplex s. e ~~petiolato-laxe~~ ramosa; glaberrima, flavo-virens, foliis obovatis, in petiolum attenuatis, obtusis s. retusis ~~apice~~ ~~leviter emarginatis~~. ~~trunci~~ umbellae trifidae, pluries bifidae; bracteis inferioribus ovatis, superioribus semiorbiculatis, connatis; cornubus subulatis diametro transversali glandulae brevioribus, (stylis ovarium ~~sub~~ superantibus, basi connatis, ad tertiam partem bifidis, stigmatibus clavatis ~~capitatis~~; capsulae ~~coccis~~ obtusis) seminibus ovatis ~~cylindricis~~, undique ~~punctato reticulatis~~ punctis ~~exsculptis~~ plus minus impressis saepe reticulato-confluentibus notatis.

In light fertile soil in shady woods, especially cedar woods, near N. Braunfels on the Blanco ~~often~~ exclusively covering large patches. Pl. Lindh. 699 Wright

✕ Transact. Amer. Phil. Soc. (N. Ser) V. p. 171

fl. April — ~~In its~~ delicate foliage and tender pale green colour it resembles the nearly related E. Peplus more than any other N. American species; — ~~but~~ it is abundantly distinct not only from that but from all other nearly related species by the connate ~~involucels~~ bracts. — Stems ~~8~~-12 inches high; connate bracts 6–10 l. in diameter; seeds 0.8–0.9 long and 0.5–0.6 l. in diameter ~~variably~~ marked; dots dark, slightly impressed, ~~in some the dots are~~ in some forms more ~~almost~~ all distinct in others they are more or less confluent, irregularly reticulate, and often forming on the ventral face two longitudinal grooves similar to E. Peplus

Euphorbia ~~Lindheimeri~~ Longicornis Scheele in Linnaea = peploides Nutt. N. Ark. in Philad. Phil. Transact.✕ 1834 non quam n. sp. annua erecta stricta, glaberrima, flavo-virens, foliis ~~sessilibus~~ cuneatis obtusis, s. emarginatis ~~in~~ petiolum attenuatis; umbellis rad trifidis pluries bifidis; bracteis inferioribus obovatis, superioribus transverse ~~ovatis s.~~ ellipticis (mucronatis) (non connatis), cornibus (linearibus obtusis integris, ~~crenatis~~ emarginatis s. lobatis) diametrum transversalem glandulae superantibus; (stylis ovarium subsuperantibus connatis ad tertiam partem bifidis, stigmatibus clavatis) capsulae ovoideis obtusis) ~~seminibus~~ ovatis, undique ~~punctatis~~ profunde excavato punctatis ~~non confluentibus distinctis notatis~~. — Drummond II. 331 Pl. Lindh. 698

Arkansas Nuttall

In sterile rocky prairies on the plateau, near N. Braunfels and on the upper Guadalupe; ~~without~~ the Rio Frio & Pecos, Wright 1822 — patches; fl. March & April — Strictly erect — 4 to 8 or 9 inches high; umbell in ~~not young~~ vigorous specimens often 4 or 5 parted — divisions as in other species also ~~not rarely~~ (E. bicolor, E. umbratilis etc.) not rarely onesided, so that they appear simple branches with opposite leaves and single ~~flow~~ involucres at each node. — The bracts ~~appear~~ connate, but are not.

Seeds with deeper, though smaller, and ~~more~~ ~~confluent~~ pores; 0.7 to 0.8 l. long and 0.5–0.6 l. in transverse diameter. —— ~~Very near E. cuneifolia in appearance but in all parts twice as large; bracts and seeds different.~~ —

Quonam, plant is a form of E. Peplus

47

Euphorbia commutata n. sp. ~~annua~~ s. plerumque biennis (s. perennis?) caulibus a basi ramosis adscendentibus, foliis petulis obovatis spathulatis, inferioribus in petiolum attenuatis, superioribus sessilibus; bracteis inferioribus ovato orbiculatis, superioribus transversis ovatis s. (ellipticis, cornubus subulatis diametro glandulae transversalem ~~vix superantibus~~ s. paullo subaequantibus; (stylis ovario aequantibus, tertia parte s. ad medium bifidis; stigmatibus clavatis) (capsulae coccis obtusis,) seminibus ovatis undique ~~exsculptis~~ distincte punctatis ~~exsculptis distincte notatis~~.

β. annua: ~~simplex~~, erecta, basi simplex; ~~bracteis involucri majoribus~~, foliis petiolatis, bracteis majoribus inferioribus ovatis superioribus transverse (triangularibus ovatis) – ~~majoribus~~

~~South to Georgia~~ Along water courses in the hilly country from Virginia Buckley (Croom) Florida (Chapman) and west to ~~to Kentucky~~ and Missouri; ~~β about Columbus Ohio (Lapham)~~ ~~Holt~~ Ohio Lapham Sullivant – E. Peplus Auct. Americ. – Stems ~~numerous~~, ascending, or in β. simple erect, 6 to 12 inches high; – Leaves in the biennial (or perennial?) ~~plant~~ persistent in winter ~~on~~ sterile shoots and red, like those of the europ. E. amygdaloides. ~~Bracts~~ ~~in~~ the biennial from about 5–6 l. ~~in diameter~~ in β. often 8 or 9 l. in diameter. – Seeds 0.8–1.0 l. long and 0.6–0.7 in transverse diameter. + – Resembles a good deal ~~E. Lindheimeri~~ peploides, from which it can be distinguished by its loose, ~~more~~ patulous growth bright green differently shaped leaves, and larger seeds.

Euphorbia portlandica fol. oblongo-linearibus cuspidatis, seminibus late ovatis, dorso versus apicem carinatis, punctis brevis impressis notatis

Euphorbia segetalis also Ohio!

+ ~~The~~ south eastern plant has ~~very~~ long & slender petioles, much like E. Peplus.

see pag 66

6656

Euphorbia montana n. sp. perennis, glaberrima ~~glauca~~, caulibus plurimis adscendentibus, foliis ~~abbreviatis~~ lanceolatis, ovatis, obovatis s. suborbiculatis, acutis s. obtusis basi subinde subcordatis ~~breviusculis petiolatis s.~~ (subsessilibus); coriaceis, glaucis bracteis omnibus orbiculato-triangulatis, rarius subcordatis, superioribus ~~rarius~~ subinde transverse ovato-triangularibus (s omnibus ~~[illegible]~~ cuspidatis); glandulis involucri semilunatis, cornubus triangularibus abbreviatis; (stylis ovarii aequantibus, basi connatis apice plus minus bilobis; stigmatibus clavato-capitatis, ~~recurvis~~ apice patulis;) seminibus late ovatis, punctis plus minus impressis obscurioribus reticulato-confluentibus undique notatis.

α. ~~minor~~ gracilior caule tenuiori, foliis minoribus, suborbiculatis s. obovatis s. lanceolatis ~~[illegible] minoribus imbricatis, rubellis, seminibus minoribus~~,

β. robusta caule robustiore, foliis bracteisque majoribus, crassioribus ~~brevib~~ late ovatis s. ovato-cordatis, ~~seminibus~~ ~~[illegible]~~, ~~glaucis~~, seminibus majoribus.

Var α In the valley of Santa Fe Creek and at the foot of the mountains, May - July (Fendler 786) Ch. Wright 661. & 1825 β. Near Fort Laramie on the North fork of the Platte (Fremont James) (Dr Mersch) — A third form, intermediate between the two, has been collected near Albuquerque in N. Mexico by Dr Wislizenus. — Many stems from a perennial root, 4 — 8 inches high; leaves in α mostly not more than 2 or 3 lines long and about as wide, in young specimens imbricate almost as in E. Parryi and red, the others glaucous, always stiff and leathery. Seeds with numerous darker very slightly impressed and somewhat confluent dots, about 1.0 l. long and 0.8 l. in transverse diameter. — One specimen (probably obtained from a damp, shady place) ~~had was~~ has ovate, slightly petiolate, larger and thinner leaves and ovate bracts. — Var β. (was obtained much farther north,) is a much stouter, though shorter plant, with thicker, larger very glaucous leaves, 5 — 6 l. long, and much larger ~~seed~~ and more deeply pitted ~~leaves~~ seeds, 1,2 to 1,3 l. in long by 0.9 l. wide. — Dr Wislizenus' specimens

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from Albuquerque, south of Santa Fe! connect both (are in every respect intermediate, though more upright, and taller than either, about 10 inches high — leaves broadly oval, bracts transversely ovate-triangular — seeds not much larger than in x but deeply pitted — dots always irregularly confluent — This species is distinct from all ~~other north american relatives~~ many of its relatives by the perennial root and by the lunate and not setaceously ~~horned~~ cornute glands (of the involucrum).

Euphorbia falcata — seminibus quadrangulatis lineis 4. serialiter transversis exsculptis (seeds much smaller with French than German specimens

Euphorbia obscura idem, sem. minoribus

Besides these I possess a number of species, ~~seeds~~ unknown to me. —

Better arrangement of the Esulae (Lunatae, glaberrimae

*. Seminibus laevibus

† bracteis connatis Amygdaloides

E. amygdaloides E. macroceras E. Characias —

†† bracteis liberis Cyparissiae

+ sem. obscuris

E. Esula E. Cyparissias E. genistoides

++ sem. pallidis

E. Paralias E. nicaeensis E. alexandrina

**. Seminibus tuberculatis s. exsculptis

† foliis sparsis Peploides seminibus pallidis

~~+ bracteis connatis~~

~~E. umbratilis~~

~~++ bracteis liberis~~

~~§ sem. obscuris~~

~~E. emarginata? caps. verrucosis~~

~~§§. sem.~~ pallidis

a. granulatis s. tuberculatis

E. aleppica E. exigua E. Pithyusa

b. exsculptis

+ bracteis connatis

E. umbratilis

++ bracteis liberis

E. Peplus. E. commutata, E. Lindheimeri, E. cuneifolia E. montana

E. Portlandica E. segetalis E. falcata E. obscura — over

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†† foliis oppositis

E. Lathyris.

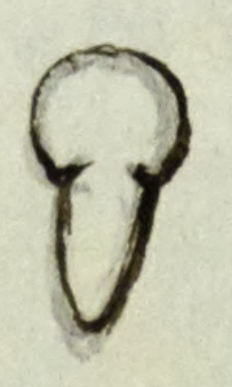
North american species, unknown to me.

E. inundata Torr.
E. graminifolia Mx (if different from E. Cyathophora)
E. mercurialina Mx
E. pubentissima Mx
E. peploides Nutt (non Gouan)
E. portulacoides
E. gracilis Ell (if different from E. Ipecacuanha
E. pilosa (in Nuttall — the Linnean plant?)
and any other new Nuttallian and other species
E. paniculata

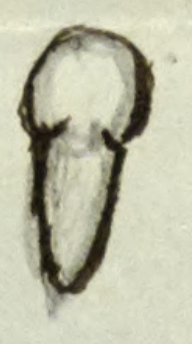
German species unknown to me.

E. angulata
E. epithymoides
E. procera & varr. (Koch synops)
E. Gerardiana: seed —
E. pannonica
E. Wulfenii
E. Esula } in seed
E. Cyparissias } in seed
E. salicifolia
E. virgata
E. lucida
E. saxatilis
E. myrsinites
E. pinea
E. segetalis (seed)
E. Peplus good spec.

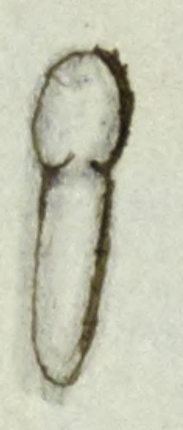
Embryones Euphorbiarum



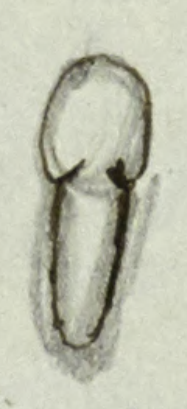
E. hypericifolia



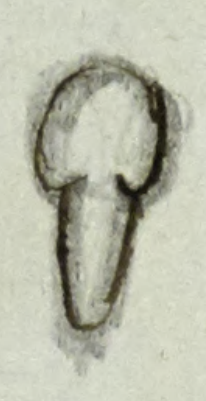
E. gracillima



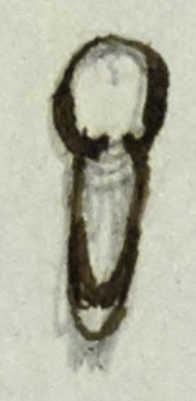
E. Geyeri



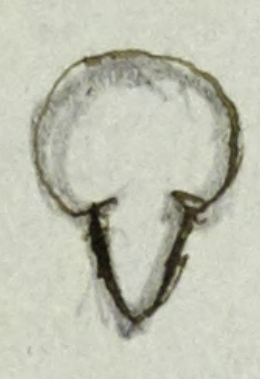
E. deltoidea welche? ich vermuthe fast die jetzige saxicola so



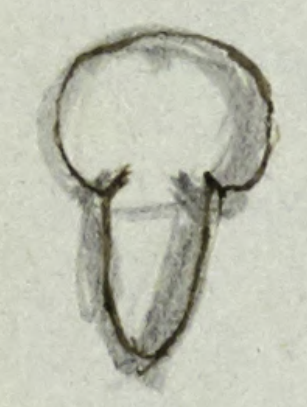
E. saxicola not ripe welche? not quite ripe rupifraga oder die jetzige saxicola?



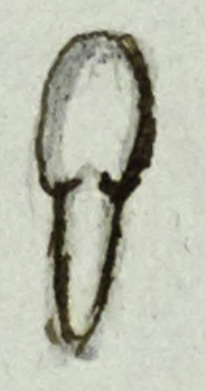
E. Polygonifolia (not quite ripe)



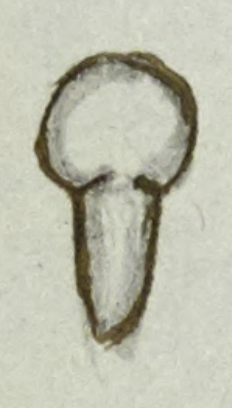
Euph. corollata



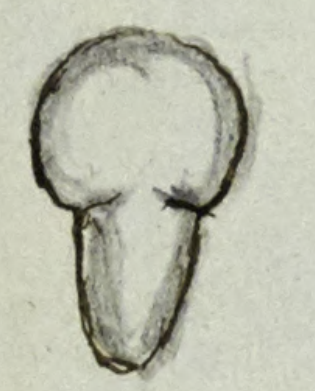
E. obtusata



Cotyledons of an unripe seed, to show, how little reliance can be placed on such examinations, if the seed is not perfectly ripe

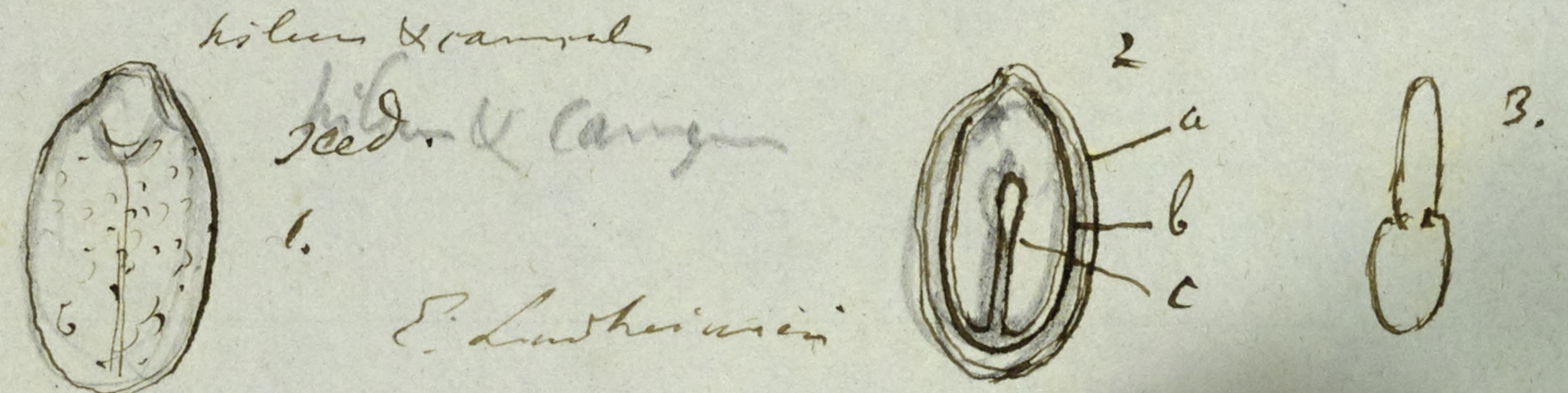


E. arkansana

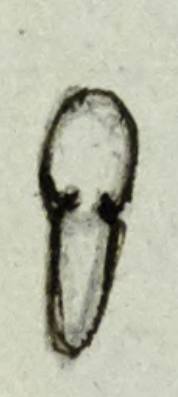


~~E. emarginata~~ ? pag — caps. verruc. sem. reticul.

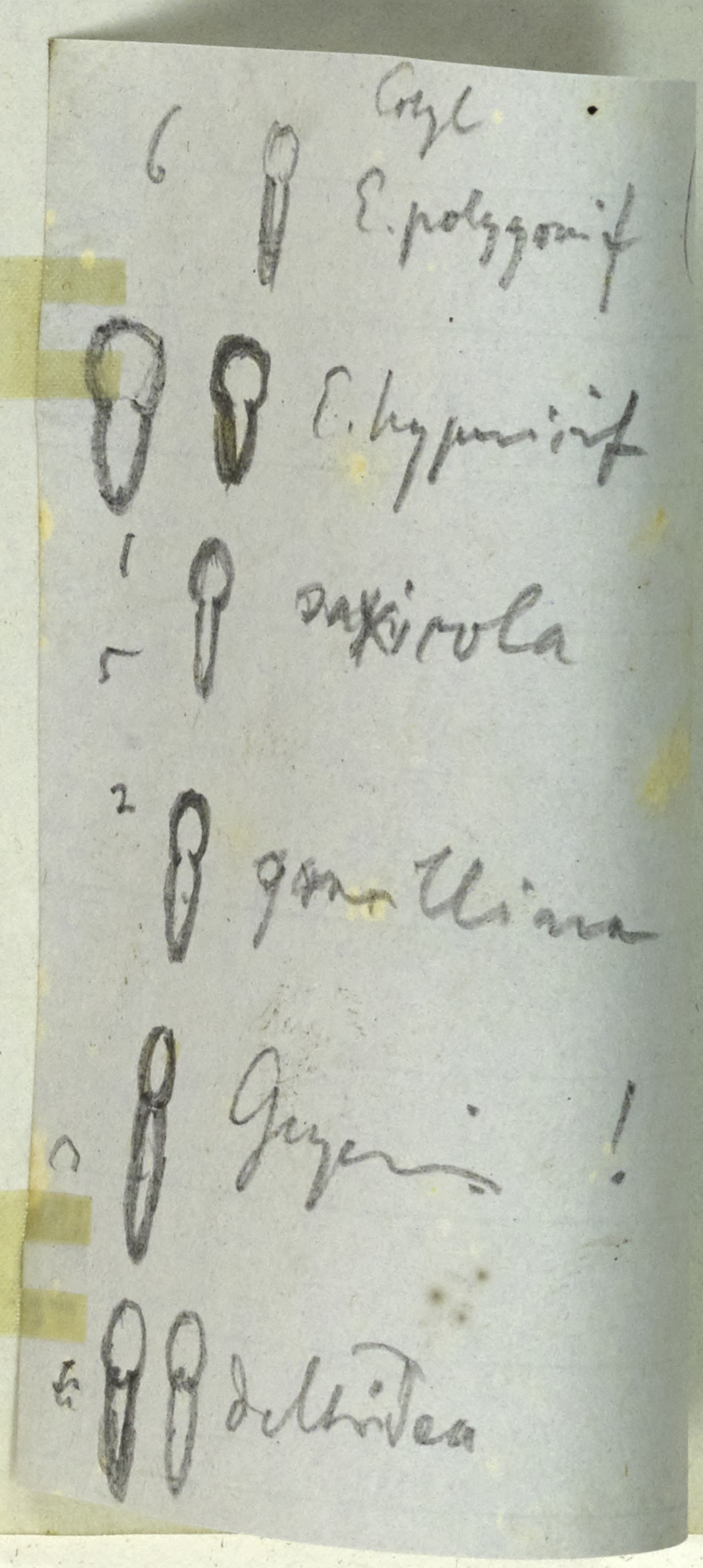
What seed is this? I am very doubtful about it it was found with the E. emarginata, which belongs to Esula — but on further Examination it must belong somewhere else — Similar to E. Arkansana but twice as large. A Berlin plant??



1. seed, ventral side; not ripe but full grown
2. Cut open. a, outer hard shell
b. inner, thin membrane adhering to the shell ~~and~~ closely attached to it at the upper end, near the hilum.
c. Rudiment of the embryo, ~~free~~ in the cavity; attached to the base of the inner coat opposite the hilum..
3, full grown embryo of a ripe seed.



E. Lindheimeri



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MISSOURI BOTANICAL GARDEN

E. Lindheimeri

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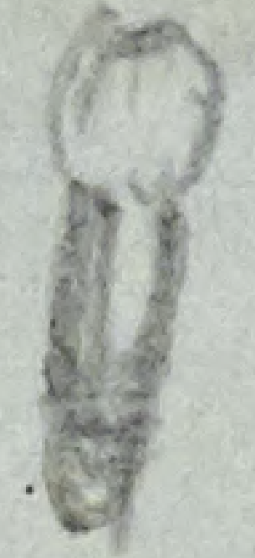
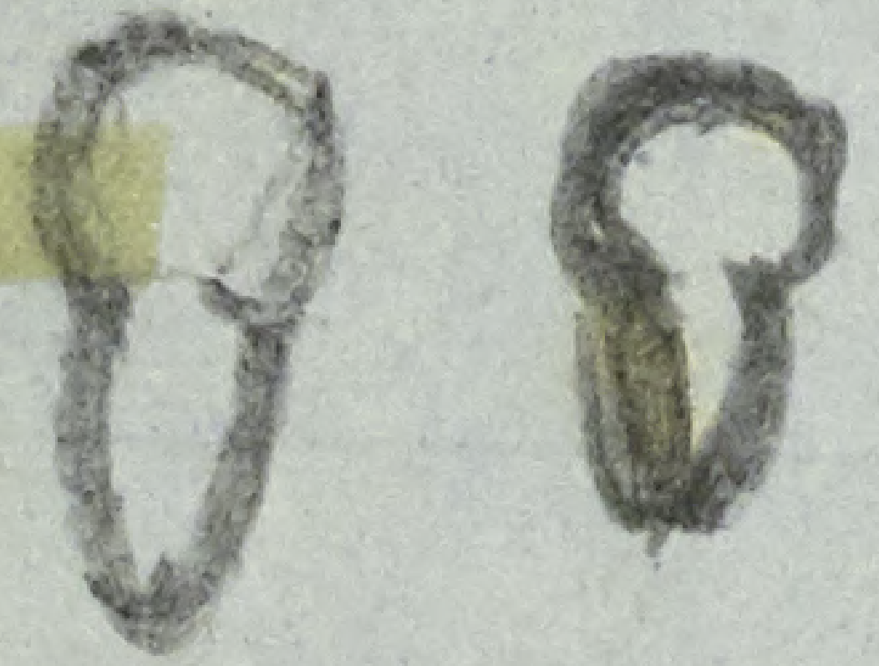
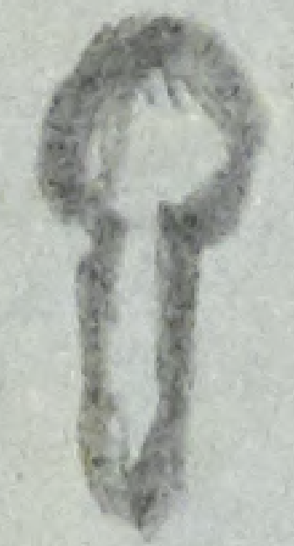


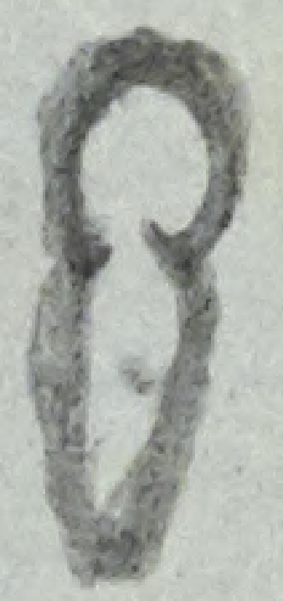
6 E. polygonif (indistinct) not ripe



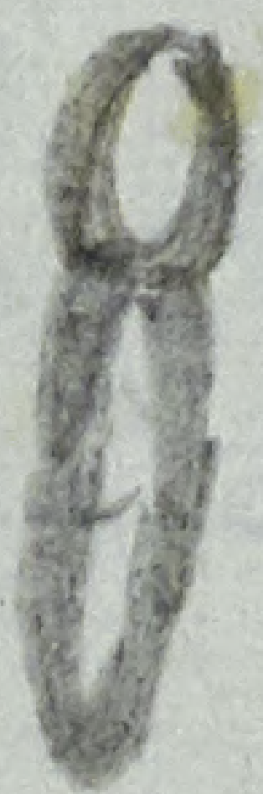
E. hypericif !



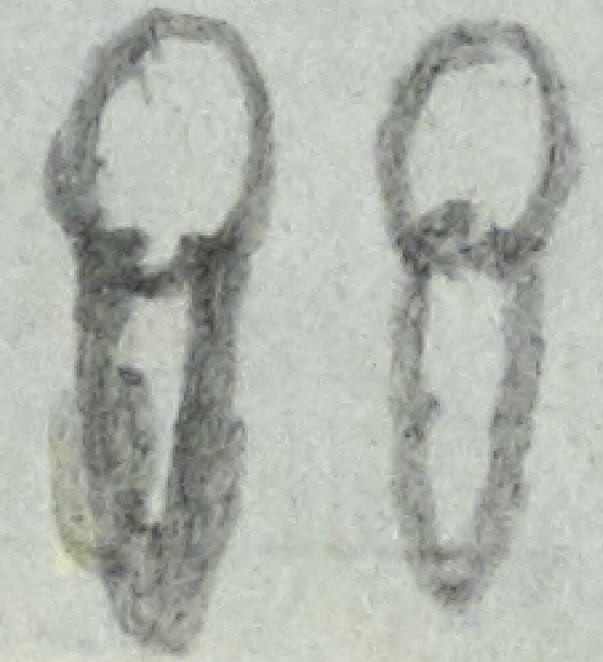
1 saxicola not ripe
5



2 gracillima !



Geyeri !



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glabriuscula
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